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ABSTRACT

The second technical paper describing the training program in educational evaluation and development contains the description and rationale for the training consortium, including discussions of the value of consortium agencies during planning and training. The following consortium units and their roles are described: University of Colorado, the Center for Instructional Research and Curriculum Evaluation (CIRCE), Biological Sciences Curriculum Study (BSCS), Earth Sciences Educational Program (ESEP), High School Geography Project, Social Sciences Education Consortium (SSEC), Southwestern Cooperative Educational Laboratory (SWCEL), Southwest Regional Laboratory for Educational Research and Development (SWREL), John F. Kennedy Child Development Center, Denver Public Schools, the Interstate Educational Resources Service Center, Northern Colorado Educational Board of Cooperative Services (BOCES), Colorado Department of Education, Ford Foundation, and U.S. Office of Education Regional Office. There are seven appendixes: 1) "Working Paper of the Biological Sciences Curriculum Study"; 2) "Working Paper of the Earth Sciences Educational Program"; 3) "Working Paper of the Southwestern Cooperative Educational Laboratory"; 4) "Working Paper of the Southwest Regional Laboratory"; 5) "Working Paper of the Northern Colorado Education Board of Cooperative Services"; 6) "Working Paper of the Denver Public Schools"; and 7) "Working Paper of the Colorado Department of Education." [Related documents are SP 005 100 and SP 005 102-103.] (MBM)

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Final Report

Technical Paper Number 2

DESCRIPTION AND RATIONALE OF THE TRAINING CONSORTIUM

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TECHNICAL PAPER NUMBER 2

DESCRIPTION AND RATIONALE OF THE TRAINING CONSORTIUM

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DESCRIPTION AND RATIONALE OF THE TRAINING CONSORTIUM

In this technical paper, the rationale for the training consortium is given, as well as a more comprehensive description of each of the consortium units. Included later in this technical paper is a discussion of the multiple roles that will be filled by each consortium unit.

I. Rationale for the Consortium

Consortiums are a lot of work. They are difficult to establish and even more difficult to maintain. Paraphrasing the well known statement, "Two persons can keep a secret if one of them is dead," one might conclude that two organizations can form a consortium if one of them is about to lose its funding. Successful consortiums require that somehow, within a rather loosely-drawn confederation, each constituent unit can find rewards from a common endeavor.

Of course, consortiums once established and operated enjoy many advantages and alternative options simply not available to any of the organizations operating singly. In the particular case under consideration here, the rationale for the inclusion of the consortium units, and

the multiple values that thus resulted are broken down into values during the planning of the training program, and values expected during the actual conduct of the training.

A. Value of Consortium Agencies during Planning

During planning, the principal value of the consortium agencies seemed to be concentrated in three areas. First, and obvious, consortium units served as sources of information and provided data that served as valuable planning input. Agencies were generous in the amount of time and consideration that they gave to the several issues involved in initiating the training consortium. To encourage each constituent unit to independently think through relevant issues in terms of the organization's own best interests, the following procedure was established. Early in the planning, a key member of each agency was asked to write a working paper considering sequentially a series of questions and topics that appeared relevant for designing the training program. A format for these working papers was provided and is included as Appendix A in Technical Paper Number 1. Seven of the consortium units found the necessary manpower and time to develop a working paper even though there were severe time constraints operating on them. These seven papers have been included as Appendices A through G in this second technical paper. Included are working papers by two national curriculum projects (Biological Sciences Curriculum Study and Earth Sciences Educational Program), by two regional laboratories (Southwestern Cooperative

Educational Laboratory and Southwest Regional Laboratory for Educational Research and Development), by two agencies representing the public schools (the Denver Public Schools and the Northern Colorado Educational Board of Cooperative Services), and by the Colorado Department of Education. These working papers have been edited slightly in the interest of consistency of style; in some cases, positions of consortium units have changed somewhat since the working papers were drafted.

It should be stressed that consortium units were asked to serve, in a sense, the organization's own self interest in developing the working papers. Additionally, no attempt was made to overstructure or unduly influence consortium agencies as to the particular content that they felt should be in their working papers. For those agencies who could not find sufficient time to respond in writing, individual planning sessions were held so that each agency had an opportunity to express its feelings on the several issues at hand.

A second rationale for including consortium units during the planning phase was because of their willingness and expertise as critiquers of planned and/or proposed training. Just as the plans of the consortium benefited from the several independent views that were expressed on the operation of consortiums generally, they also profited from the multiple opinions and views that were brought to bear upon the

proposed training program. This criticism occurred throughout the design grant period, culminating in November as each consortium unit reacted to and influenced the content of the Preliminary Final Report. In some cases, activities from mid-November to mid-December, 1970, resulted in many additional alterations to the Preliminary Final Report. The vast differences in orientation of the consortium units, which will become apparent as the reader scans the description of the several agencies, virtually insured that a number of conflicts of at least moderate intensity would arise while determining the specifics of the planned training. Nevertheless, there was opportunity to resolve most differences to the satisfaction of the agencies involved.

A third obvious value of the consortium units during planning is closely related to the second value mentioned above. Because of their unique characteristics, each agency has specific values and orientations quite different from the values and orientations of the other units. The rich mix and exchange of ideas that this consortium triggered assisted materially in enhancing. we believe, the feasibility of the proposal herein contained.

B. Value of Consortium Agencies during Training

Moving from the planning phase to the contemplated operational or training phase, the rationale for inclusion of consortium units expand and take on equal, if not greater

importance, than during planning. Closely related to one point above (that is, serving as critiquers of planned training), the several member units will also function as direct and valuable critiquers of the actual training that takes place. This is as it should be. In many cases, as noted below, consortium units will be in a very direct position to observe and otherwise evaluate the training that is being conducted as well as the trainees that are being produced by the program.

A second rationale for the use of consortium units during the training is that most of them serve as valuable sources of trainees for the various programs. This is obvious in the case of the public schools, but it is also true of nearly all the consortium units. They either have on board employees who would benefit from additional high quality training in specific areas or they would like to hire personnel trained in educational evaluation or development. Additionally, and related to the point in the preceeding paragraph, when these consortium units provide personnel from their organizations with the opportunity to take part in a training program, it becomes logical for them to evaluate the training that the person receives by his performance when he returns to the parent organization.

A third value is that the agencies serve as training sites themselves. Because of other constraints on their resources (particularly their manpower), certain of these

agencies will not function as a training site per se. That is to say, they do not have sufficient personnel to permit them to conduct formal courses of training. Certain development projects, however, do have on board a staff with the competencies and the necessary time to devote to such undertakings; it appears that several effective training sites actually will be at development projects (see Technical Paper Number 3, Section IV).

A fourth value that readily can be seen is that the consortium units serve as a potential source of instructors for the various training programs. This can be visualized most easily in terms of the proposed intensive training institutes. For example, staff at CIRCE, staff at the Regional Laboratories, staff at the Northern Colorado Educational Board of Cooperative Services, staff at the John F. Kennedy Child Development Center, staff at the national curriculum projects, and staff at nearly all of the consortium units provide a viable and varied manpower pool from which to draw in developing a cadre of instructors. This is probably particularly true, as noted above, for the shorter training institutes. This ability to draw upon expertise from within the consortium itself, where the goals of the training program are agreed upon and well known, certainly should benefit the training program. It is also apparent that the strength and effectiveness of the institutes likely can be enhanced by

the inclusion of staff from outside the consortium units; especially staff of high competency who are able to devote more than a few days to a training institute.

Each of the consortium agencies will serve as an internship site. The extent of involvement will be dependent upon many things, among them, the particular needs of the internship site and the particular desires and competencies of the trainee. The variety of internship sites available is pronounced; its richness reflects the versatility of the consortium units. Thus, internship sites exist at CIRCE in innovative approaches to evaluation of curriculum and of other projects. Strong, viable internships in development easily can be established at the national curriculum projects. Active internships, likewise, can be structured with regional laboratories; it might be noted that the Southwest Regional Laboratory (SWRL) has established an internship program that is entering its fourth year. The internships at the John F. Kennedy Child Development Center cut across many high priority areas, such as minority groups, early childhood, reading difficulties of children, and the like. Extensive opportunities exist for internships with public school districts where the evaluation trainee would likely be cast in a decision-oriented mode, while the trainee in development could become involved in curriculum development underway in the school districts. Internships with the State Department of Education, with the Ford Foundation, or with the Regional Office of the Office of Education could

provide valuable experience for interns in conducting evaluations of programs of considerable scope and wide significance.

A final reason for including consortium units during the actual training is identical to one of the reasons for including them during the planning of the training. Simply stated, the diversity of their views enhances the effectiveness, efficiency, and feasibility of the training program. Their unique, personalistic perspectives guarantee that a broad spectrum of opinions will be sampled as critical decision points are reached in the training program.

II. Description of Consortium Units

Each of the consortium units is considered briefly and simply below; space does not permit elaborating upon all of the ramifications of each of the institutions' activities. Nevertheless, an attempt is made to provide sufficient information that the reader will have a better understanding of the essential characteristics of each of the agencies.

1) The University of Colorado

The University of Colorado, with its campuses at Boulder, Colorado Springs, and Denver, is increasing rapidly in size and in stature as a center for excellence and innovation in education. It was the site of much of the early work in "the new mathematics," and in recent years has attracted to Boulder the High School Geography Project*, the Biological Science Curriculum Study Committee, the Earth Science Curriculum Project, as well as the Social Science Education Consortium (these other consortium units are discussed below). As an example of an unique program recently established, consider the Center for Education in the Social Sciences; it is designed to promote communication, innovation, and research directed toward high quality pre-service and in-service education of teachers in the social sciences. The Center is a cooperative effort between the social science departments and the School of Education.

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* Terminated August 31, 1970.

The University's library system is exceptional in many respects. Among other high points, it is excellent with respect to its Education Library, Documents Library, and Automation and Systems Division. The director of the Automation and Systems Division is an expert on systems design and computer applications. An American College and Research Libraries Association survey, 1969, showed that the University of Colorado Education Library is surpassed, in size and significance, only by the education libraries of Harvard and Stanford Universities. The library takes a vigorous approach to making contacts and supplying services both inside and outside the University, including work for the Education Commission of the States, which is located in Denver. The library maintains a file on United States and Canadian education dissertations, on which an annual summary and analysis has been completed and published (by Phi Delta Kappa) each year.

The University of Colorado has an excellent Bureau of Audiovisual Instruction. Its staff has had extensive experience in teacher-education activities and in the creation of all kinds of audiovisual material. The bureau will serve as an excellent resource during some phases of development training.

The University of Colorado houses two major computer centers operated by expert technical personnel. One

on the main campus employs the IBM 360, Model 40, 128 K. The machine is partitioned in four areas with two areas foreground, and two areas background for telecommunication purposes. The version is F release of COBOL. Machine configuration 4, 9 channel, 800 BPI tape drive; three 23-11 disc drives; one card reader punch; and one 1403 N-1 printer. The Scientific Center of the Graduate School is located on East Campus and uses the CDC 6400. The operating system is SCOPE, 3.1, 6 version. The machine has six high-speed tape drives, one high-speed printer, and is capable of multiple-processing. It is capable of 60,000 words core storage, equivalent extended storage, and over one million words of disc storage. The machine has telecommunication capability. While these facilities have been continously pressed to match growing University demands, the facilities and services will be available to the trainees in evaluation and development.

Also housed within the University and more directly relevant to this specific proposal is the Laboratory of Educational Research with its Title IV, ESEA, graduate training program in research. The laboratory has built many bridges to diverse agencies while establishing an active program of internship and service. During the academic year 1968-69, for

example, the total group of research trainees (twelve in number) performed over 5,000 hours of internship activities while extending services to over forty agencies in the region. This disciple-like activity has continued unabated and, in fact, increased over the years. The Laboratory has established itself as one of the primary sites for research training in the United States. It is fully expected that multiple interfaces will be possible between the Title IV research trainees in the laboratory, and the trainees undergoing the evaluation and development training program.

2) The Center for Instructional Research and Curriculum Evalaution (CIRCE)

The Center for Instructional Research and Curriculum Evaluation housed within the University of Illinois, Urbana campus, has established itself as a leading national site in evaluation theorizing and implementation. Its rise to prominence in the last half of the decade of the 1960's reflects a remarkable ability to operate with the parctitioner on the one hand and with the more theoretically oriented, University-based colleague, on the other.

The objectives that have been predominant for CIRCE have been:

(1) To furnish help to curriculum projects by

evaluating curricula, instructional materials, and methods of instruction.

(2) To develop new concepts of relationships between learning and measurement and to study the dissemination of innovations; to consolidate research results across fields and levels of learning.

(3) To disseminate development products (tests, methods, models) to professionals, schools, colleges, and interested organizations in order to improve educational practices.

(4) To increase the output of well-trained researchers, evaluators, and developers, and to assist in the reorientation of trained behavioral science researchers of other fields toward educational concerns.

In their concern with the operational and conceptual problems of curriculum projects, CIRCE has indeed been fortunate to be surrounded by several national curriculum projects of tremendous import. For example, the Curriculum Laboratory established at the University of Illinois is performing several vital functions. It houses several groups, such as a curriculum development group for each of the disciplines, a group experimenting with laboratory practices as part of the undergraduate preparation of teachers, a group experimenting with methods for teaching gifted children, a group dealing with exceptional children, and the like. An experimental school is part of the Laboratory as well as other laboratories, shops, and supporting facilities. The Curriculum Laboratory also has research, training, and service functions. Additional projects (other than the Curriculum Laboratory) include the University of Illinois Committee of School Mathematics, the Demonstration

Project for Gifted Youth, the English Curriculum Project, and several programs focusing on the cognitive development of pre-school children.

The national reputation of CIRCE and its ongoing activities make it ideal as an internship site for doctoral students in evaluation and development. Exposure of the doctoral candidate to more than one orientation (e.g., Colorado) is seen as desirable.

3) Biological Sciences Curriculum Study (BSCS)

The Biological Sciences Curriculum Study commenced its activities in the late 1950's and has established itself as a leading factor in changing the content of science courses in the nation's schools; in fact, the basic materials produced by BSCS also have been translated into many different foreign languages. Its support has been drawn primarily from the National Science Foundation and its continuous funding reflects the high quality output that it has produced. For example, one unique project of BSCS, funded by the U.S. Office of Education's Bureau of the Handicapped, includes the preparation of courses in the life sciences for educable mentally handicapped children. From inception of the project in the Summer of 1969, BSCS staff have moved rapidly, field testing their first package with eleven to thirteen year olds in Spring, 1970. The materials are exciting and unique; for example, reading by the student is not necessary.

Opportunities for stimulating internships in development and, in part, evaluation are found within BSCS's many activities. The BSCS working paper (Appendix A) contains well thought-out procedures for enhancing training in development.

4) Earth Science Educational Program (ESEP)

The Earth Science Educational Program, like BSCS, is located in Boulder and is one of the group of curriculum reform projects supported by NSF. Work on ESEP began in 1963 under the sponsorship of the American Geological Institute. ESEP includes three related sub-projects: Earth Science Curriculum Project (ESCP); Environmental Studies (ES); and Earth Science Teacher Preparation Project (ESTPP). The major objective of the project is the improvement of earth science education in secondary schools. Very close contacts have been maintained between the BSCS and ESEP staff since the beginning of the earth science curriculum revision. The curriculum materials developed by ESEP have reflected an orientation towards directed discovery and an emphasis on pupil acquisition of behaviors. In attempts to strengthen their curriculum approach, the project's staff has recently been attempting to build into their materials the intrinsic motivation model, even though this means moving away from a rigidly-prescribed curriculum. ESEP has moved toward the creation of flexible learning environments and has

increasingly recognized the paramount importance of teacher training. It exists as a vital and active site for development interns, as well as for cogent evaluation activities (see Appendix B).

5) High School Geography Project

Although the High School Geography Project was phased out in August, 1970, the experiences in curriculum development that they have had over the past several years provided an important resource for planners of the design project. Since the geography project has been disbanded, it cannot serve as a site for interns or for other training. Still it was felt appropriate to acknowledge, in this proposal, the assistance on development that was forthcoming from the staff of that project.

6) Social Sciences Education Consortium (SSEC)

Also located in Boulder, the Social Sciences Education Consortium is providing leadership in the area of the social sciences as are BSCS and ESCP in their fields. Incorporated in 1965 as a non-profit corporation, the original consortium was founded in 1963 at a Purdue University conference. In August, 1967, the main offices moved to Boulder, Colorado, to the University of Colorado campus. Support for the work of the SSEC has come from several sources such as NSF, the U.S. Office of Education, and the Charles F.

Kettering Foundation. The consortium is composed of sixty outstanding social scientists and educators who have been active in developing and implementing new ideas and new materials in the social sciences. Its many activites related to curriculum development and evaluation of social science materials make it an excellent site for internships and training.

7) Southwestern Cooperative Educational Laboratory (SWCEL)

Located in Albuquerque, New Mexico, the Southwestern Cooperative Educational Laboratory is one of the group of laboratories funded under Title IV of the Elementary and Secondary Education Act of 1965. Its major program interest is to develop and improve first year school experience in the language arts with initial focus on oral language for Chicano, Indian, and black children. Programs are being developed to improve the pre-school acquisition of oral language, to continue oral language instruction in the primary grades, and to ease the transition from oral language to reading. The many activities underway at SWCEL make it an opportune location for interns in both development and evaluation (see Appendix C).

8) Southwest Regional Laboratory for Educational Research and Development (SWRL)

The Southwest Regional Laboratory for Educational Research and Development is located in Inglewood, California. Major program foci for SWRL are the

following: development of a coordinated primary grade curriculum that includes communication skills, problem solving, and humanities elements; development of a computer-managed instructional system to aid the teacher, and a computer-based planning system to assist the school administrator in decision making; and development in instructional materials to train school personnel who use SWRL developed products. These programs result in four primary areas of development: in communication skills for grades K through 4; in generalized problem solving skills for grades K through 4; in computer-managed instruction in reading, reading readiness, and mathematics at the first grade level; and in the computer-managed administrative planning system to assist the administrator in decision making. SWRL has cooperated with the Systems Development Corporation in Santa Monica, California, on the development of the computer programs. This advanced orientation to development (see Appendix D) marks SWRL as an excellent site for interns, again in both evaluation and development.

9) John F. Kennedy Child Development Center - University of Colorado Medical Center

The John F. Kennedy Child Development Center presents unique opportunities for internships, primarily in evaluation but also in development. The range of

activities underway at the center is broad; an expert resident professional staff conducts various training programs as well as works with children in numerous settings.

Three projects currently underway are funded under the Education Professions Development Act and provide the nucleus from which exceptional internship opportunities could emerge. The first program involves a demonstration pre-school laboratory that has been established as an integral part of the development center. This project, titled the Early Childhood Special Education Fellowship Program, is designed to train early childhood special educators to deal with exceptional children in the regular pre-school program or regular primary classroom. It serves eight experienced teachers (full academic year fellowships) plus ten teacher-trainers and five college preservice teacher-trainers (one month practicums) who have agreed to collaborate in initiating new early childhood programs or changing existing programs. Trainees participate in all activities of the Center, which is an interdisciplinary evaluation and treatment program for children who have various developmental disabilities. All trainees learn about the complexities of normal and abnormal child development from many points of view. The EPDA trainees focus on designing and implementing individualized

educational programs for children with specific deficits who represent the handicaps found in regular classrooms, particularly in rural and urban-ghetto areas. Particularly effective and generalizable programs and protocol materials are field-tested, packaged, and disseminated under other Educational Professions Development Act (EPDA) programs and related auspices.

The trainees participate in four classroom programs, which represent four distinct models of early childhood education: 1) An Academic Preschool (Bereiter-Englemann and Becker); 2) A System of Open Learning (Elkind, Hawkins, Meier, Spodek); 3) Behavior Modification (Baer, Haring, & Hewett); and 4) Autotelic Responsive Environment (McAfee, Meier, Moore, Nimnicht). Trainees learn to use new media and proven techniques for effective training of others in order to insure the multiplier effect of training teachers and teacher-trainers. The internship opportunities for masters level students, in both development and evaluation, are obvious.

A second major program at the JFK Child Development Center, also funded under EPDA, is titled the Remote Training of Early Childhood Educators. Using materials and procedures which were most successful during pilot institutes, plus those developed during the first year

of this EPDA program, staff guide the development of continuing inservice training for professionals working with environmentally deprived and other educationally handicapped children. During the second year, ten teacher-aide teams receive three one-week massed-imput sessions woven into the thirty-three weeks of distributed field practice. The intensive workshops familiarize participants with the unique training process and expose them to concentrated information regarding sociological, anthropological, medical, psychological, and pedagogical considerations necessary for preventing and/or dealing effectively with developmental deviations in children.

The first year of field work used a sequence of sixty-four previously validated written and partially filmed learning episodes comprising sixteen training units plus the field-testing of eight new units. The trainees, working at their own sites, videotape their efforts to implement the learning episodes (being critiqued by project staff) as well as record and critique similar efforts of two additional teacher-aide trainee teams in each respective satellite location. Continuing evaluation by program participants, project staff, and an independent evaluator influences annual program modifications. Each subsequent year adds new groups of trainees and new curriculum

for field testing and/or wide-spread dissemination. Provision is being made for up to ten quarter hours of credit for participants in this experience. Again, the opportunities for fruitful internships in evaluation and development are apparent.

A third program is just getting underway and the extent of the ramifications of the program are thus not yet apparent. However, this third program, also funded under EPDA, involves a group of students, many of them Chicano, in three distinct learning environments. The first environment occurs in academic learning situations at the University of New Mexico in Albuquerque, through which the project is funded. This training site also has responsibility for selection of the student population. The second learning environment will be provided by the John F. Kennedy Child Development Center and will consist primarily of block instruction in child development, both normal and abnormal, on individual learning disabilities, and on various types of developmental assessment and testing. The Chicano student trainees will then go to the Los Angeles area for an extended live-in on-the-job training type of experience in Chicano neighborhoods. The possibilities of a worth-while internship in evaluation are currently indicated with the latter program.

It should be noted that the uniqueness of the programs at the John F. Kennedy Child Development Center makes them potentially viable in ways other than as internship sites. It is apparent that the various groups of JFK fellows and trainees might well profit from intensive training in either evaluation or development that could be incorporated into their other program activities. Staff would be on hand at the university to make such instruction feasible. In certain circumstances it might even be possible to consider conducting a one, two, or three week intensive session for fellows operating at the Kennedy Center plus opening the training to other persons involved in early childhood education.

10) Denver Public Schools

The Denver Public Schools represent one of the three consortium agencies that are directly connected with the public schools. Being a large district, Denver employs certain personnel who have evaluation and development responsibilities, and there are some indications that more personnel are being employed in these genral areas. The working paper for the Denver Public Schools, Appendix E, describes quite well these various roles and the responsibilities thereunto pertaining. The opportunities for internship, say on the part of masters students, would be extensive. It should be noted that the student population of Denver

is representative of the student population found in most large urban areas. As such, opportunities for internship training on significant problems within American education are multiple and obvious.

11) The Interstate Educational Resources Service Center

This eight state agency is housed within the Utah Department of Education in Salt Lake City. It draws its funding primarily from ESEA, Title V. Its major emphases are assisting schools in evaluation and planning. The state superintendents of public instruction in the eight member states have designated evaluation and planning as high priority areas. Additionally, over thirty behaviors of evaluators and planners have been identified as of immediate importance. Examination of the various behaviors designated as high priority by the Interstate Educational Resources Service Center indicates that they overlap considerably with many of the objectives established for this training program. This being the case, it would seem that this consortium unit probably would operate primarily as a feeder source, recruiting and sending to a training site groups of public school personnel for intensive training institutes in evaluation. It is also possible that the Service Center might be an internship site.

12) Northern Colorado Educational Board of Cooperative Services (BOCES)

The Northern Colorado Educational Board of Cooperative Services has its main office in Boulder, Colorado, and provides direct service to seven school districts in three counties. They are Boulder Valley, St. Varain, Westminister, Eastlake, Estes Park, Poudre, and Big Thompson. The three associate members of the Educational Board who coordinate activities with the seven participating school districts are Colorado State University at Fort Collins, The University of Colorado at Boulder, and the University of Northern Colorado at Greeley.

The BOCES program has three main elements; programs development, program evaluation, and information retrieval. Under program development the districts are given individual assistance in expanding existing programs and developing and implementing new programs with long range, intermediate and short-range goals. Via the program of evalution activities, the districts are aided in coordinating program development and measurement and in establishing on-going evaluation of programs thus developed. The information retrieval system initiates its operation with educators requesting specific information. Then information specialists retrieve data by an automated computer search of an educational data base consisting of ERIC (Research in Education) and CIJE (Current Index to Journals in Education).

Additionally, reference librarians are available who conduct manual searches for information relevant to individual requests.

As is apparent from the working paper for the Northern Colorado Educational Board of Cooperative Services (Appendix F), unusual and dramatically feasible ideas for installation of an evaluative attitude within the school district are set forward. These ideas have been important determinants of much of the thinking and planning to date that has gone on within the consortium.

13) Colorado Department of Education

Located in Denver, the Colorado Department of Education provides a large number of varied internship opportunities for masters level trainees in both evaluation and development. It should be noted that two of the proposed evaluation and development staff have been actively assisting the State Department of Education for the past eighteen months to plan and conduct a unique state-wide assessment program; trainees will be able to interact with personnel on this project and intern on it. The number of projects that the State Department initiates each year is large, and the opportunities for valuable internships would be great. Additional specifics about the organization of the State Department, particularly in regard to evaluation and development, are included in the working paper from that organization (Appendix G).

14) Ford Foundation

Discussions are currently underway with officials from the Ford Foundation exploring possible relationships between the Foundation and the Consortium. It is generally known that the Ford Foundation has been active in the field of education. For example, recently completed or in termination phases are over a score of programs operating nationwide in school districts, state departments, and universities. Many of these involve several districts or agencies, and generally are concerned with school improvement. The projects tend to be of a demonstration, rather than a research, nature, and great variety is apparent.

Three Ford programs are of such a nature that they would offer possibilities for the placement of evaluation interns, if feasible relationships can be assured. One of these is a program to develop new school administration training programs. This has been conducted at five sites, and an evaluation intern might circuit-ride with the program director. A second program, titled Project Opportunity, operates out of Atlanta and involves trying to enrich the high school experience of many youngsters from the ghetto. It is a variation of the Upper Bound theme and involves special counselors in high school, college prep advisers, etc. The Foundation might

be able to use the services of an evaluation intern in evaluating this program. A third program on which an evaluation intern might work is termed the Leadership Development Program. Under this program, fellowships are provided annually for seventy non-urban educators and other potential community leaders. Those selected design their own training program and select their own training site(s). The three main groups presently recruited into the Leadership Development Program are Chicanos from the Southwest, rural blacks from the South, and non-urban dwellers from New England; one of the Field Offices for this program is located in Denver.

Even more unusual, and also under discussion with Ford officials, is the possibility of conducting an institute in evaluation for those of the seventy leadership development fellows who felt that evaluation should be part of their year's training. Since fellows plan their annual programs in February and March, this would be an opportune time to get to them information on the possibility of an intensive training institute as one program option.

15) U. S. Office of Education Regional Office

The Denver regional office of the U.S. Office of Education has been helpful in the planning of the consortium. In addition to reacting to the proposed training program, it is also quite possible that

certain trainees will profit substantially from an internship experience in the regional office. Evaluation is clearly an everyday responsibility in such a setting.

It is apparent that the training program would be designed to take advantage of the unique and dynamic features of the various agencies in the proposed consortium. It is likely that, with the passage of time and with the reality of operational funding, other organizations would be identified that have either unique internship opportunities or that have personnel who would profit from additional training in evaluation and development. Two such groups that are under study are the National Assessment Regional Office, located in Denver, and the Belmont Project Branch, also located in this area.

III. Roles of Consortium Units

From the material presented above, it should be obvious that each of the consortium units possesses unique characteristics which serve as visible and pronounced justification for their inclusion in the consortium. It is anticipated that many other qualities and desirable features of the consortium units will become apparent after extended operational activities with them. In way of specification and summary, the table on the following pages is presented to detail the extent of participation by the various agencies in the design phase, and the intended degree of participation in the operational phase. Additionally, roles of each institution during both the design phase and operational phase, are enumerated. Such a table serves to highlight the tremendous variety represented in the consortium units that make up the Colorado Center for Training in Educational Evaluation and Development.

Table 1. Agencies in the consortium, their roles in designing, and their likely roles in implementing, the training program.

Institution or Agency	Degree of Participation in the Design Phase	Degree of Participation in the Operational Phase	Roles during Design Phase	Likely Roles during Operational Phase
University of Colorado	Extensive	Extensive	1. Prime contractor. 2. Organizer of design planning. 3. Preparer of final design report.	1. Prime contractor. 2. Source of instructors for evaluation and development training. 3. Site of the academic training in evaluation and development. 4. Source of materials development personnel.
Center for Instructional Research and Curriculum Evaluation, University of Illinois--Urbana	Active	Active	1. Participant in designing training.	1. Source of instructors for evaluation training. 2. Source of materials development personnel. 3. Evaluation and development internship site (doctoral level).
National Curriculum Projects:			1. Participants in designing training. 2. Presenters of principles established in prior development work. 3. Presenters of personnel needs in development.	1. Source of instructors for development training. 2. Development internship sites. 3. Potential sources of trainees in development and to a lesser extent, evaluation, especially for short-term intensive training programs.
Biological Sciences Curriculum Study	Active	Active		
Earth Sciences Educational Program	Active	Active		
High School Geography Project *	Minimal	Minimal		
Social Sciences Education Consortium	Active	Occasional		

* Terminated August 31, 1970.

Institution or Agency	Degree of Participation in the Design Phase	Degree of Participation in the Operational Phase	Likely Roles during Design Phase	Likely Roles during Operational Phase
Regional Laboratories:				
Southwestern Cooperative Educational Laboratory-Albuquerque	Active	Active	1. Participants in designing training. 2. Presenters of principles established in prior development work. 3. Presenters of personnel needs in evaluation and development.	1. Evaluation and development internship sites. 2. Potential sources of trainees in evaluation and development, especially for short-term intensive training programs.
Southwest Educational Research Laboratory-Los Angeles	Active	Active		
John F. Kennedy Child Development Center	Active	Active	1. Participant in designing training. 2. Presenters of personnel needs in evaluation and development.	1. Evaluation and, to a lesser extent, development internship sites. 2. Potential source of trainees in evaluation and development, especially for short-term intensive training programs.
Public School Representatives:				
Denver Public Schools	Extensive	Active	1. Participants in designing training. 2. Presenters of personnel needs in evaluation and development.	1. Evaluation and, to a lesser extent, development internship sites. 2. Potential sources of trainees in evaluation and, to a lesser extent, development, especially for short-term intensive training programs.
Interstate Educational Resources Service Center (Salt Lake City, Utah)				
Northern Colorado Educational Board of Cooperative services (Boulder, Colorado)				

Institution or Agency	Degree of Participation in the Design Phase	Degree of Participation in the Operational Phase	Roles during Design Phase	Likely Roles during Operational Phase
Colorado Department of Education	Extensive	Active	1. Participants in designing training. 2. Presenters of personnel needs in evaluation and development.	1. Evaluation and, to a lesser extent, development internship site. 2. Potential source of trainees in evaluation and development, especially for short-term intensive training programs.
Ford Foundation (New York, New York) and its Field Office for the Leadership Development Program (Denver, Colorado)	Occasional	Moderate	1. Participant in designing training.	1. Evaluation internship site. 2. Potential source of trainees in evaluation, especially for short-term intensive training programs.
Office of Education Regional Office (Denver)	Occasional	Occasional	1. Participant in designing training.	1. Evaluation internship site.

TECHNICAL PAPER NUMBER 2

APPENDICES A-G

WORKING PAPERS OF CONSORTIUM AGENCIES

Appendix A: Biological Sciences Curriculum Study

Appendix B: Earth Science Educational Program

Appendix C: Southwestern Cooperative Educational Laboratory

Appendix D: Southwest Regional Laboratory for Educational Research and Development

Appendix E: Denver Public Schools

Appendix F: Northern Colorado Educational Board of Cooperative Services

Appendix G: Colorado Department of Education

APPENDIX A

WORKING PAPER ON THE EVALUATION, DEVELOPMENT AND DIFFUSION TRAINING DESIGN PROJECT

William V. Mayer and James T. Robinson

Biological Sciences Curriculum Study (BSCS), Boulder, Colorado

This paper will attempt to follow as closely as possible the suggested format for Working Papers of Consortium Constituent Agencies, although many of the questions are not germane to this organization. For example, we regard evaluation and diffusion functions as an essential part of development. Newly developed materials must be evaluated, and information regarding them must be disseminated. Development without evaluation and diffusion is a sterile task.

I. There is a pronounced shortage of persons trained in evaluation, development and diffusion. No collegiate programs and few organizations offer opportunities to develop these skills. A search for competent individuals, who have already developed skills in these areas, goes on constantly. We have had considerable success in getting people with training and experience in these three areas. They have been brought from all over the United States after extensive searches and evaluation. Because we have concentrated on the few experienced personnel available in these fields, they have been able to

enter productive investigations within the Curriculum Study from their moment of hiring. We have not been able to afford the luxury of extensive training programs, although everyone learns from his on-the-job experience.

A. The BSCS currently employs 12 persons at the Consultant-Administrative level. Of these, two have no degrees from institutions of higher learning, one has a bachelor of science degree, five have masters degrees, four have their Ph.D. Each has been hired for a particular skill level, and the background in which he had had extensive experience and training.

   By its very nature, the process of development also subsumes evaluation and diffusion. Thus, no one person is exclusively concerned with development, evaluation or diffusion, but in very large measures is concerned with all three. Each, however, probably spends more time in one of the three categories than the other two. If it is feasible to categorize the staff in terms of their major areas of interest, three would be concerned with diffusion, three with evaluation and six with development.

B. Our current staff could stand to be doubled and still be kept very busy on its various tasks. We consider, then, the need for three persons concerned with diffusion,

three with evaluation and six more with development. They may be at any level, depending on the skills they bring to the organization. As indicated by the backgrounds of our current staff, persons with no degrees and persons with PH.D degrees can contribute to this organization.

C. If the organization's budget were to be increased by $100,000 annually, we could add approximately seven individuals to the staff, rather than the twelve needed, at salaries averaging approximately $15,000 per year, a minimal salary for highly qualified people. Under this provision, we would add two in diffusion, two in evaluation, and three in development at levels commensurate with their skills.

D. The skills vary with the area in which individuals are involved. For example, within our development function, there is a need for writers, artists, film makers, slide specialists, film strip developers, model makers and others who can contribute to a multi-media approach to education. In addition, of course, such individuals would have to be able to function within the program objectives as they make their contribution to a project.

Evaluation personnel must understand design and methodology of research, statistical analysis, measurement, and use of such instrumentation as the computer.

Personnel concerned with diffusion must know the characteristics of the population to which the materials are addressed, both student and teacher. They must be familar with administrative difficulties encountered in introducing new materials. They must be familar with marketing practices and teaching strategies. They must see how teacher behavior can be changed in such a manner as to make the new materials most effective.

However, while some of the skills above can be taught, such items as imagination, creativity, and the ability to make intuitive leaps cannot. They must be attributes of all our personnel; those concerned with the development of materials as well as those concerned with evaluation and dissemination.

II. Any person can profit by additional training; however, our personnel have been carefully selected and come to us already competent in the area in which they are to work. There would be little value in sending current personnel for specific training. Thus, the answers "A" through "H" below are hypothetical in relation to this organization.

A. Some persons, who are currently within the organization, might profit by training in computer technology or use of new and innovative instrumentation such as computer system instruction. However, at the present time, no individual is in need of training in the specialty

in which he is employed.

B. Length of time would depend on the skill to be mastered. How long would it take someone to become familiar with computer-assisted instruction or making programs for same? How long would it take an individual knowing nothing of the computer to become skilled enough in its use?

C. Were we to send individuals for any type of training, they would return to this organization in their former position, which is already graded at a level high enough to compensate for additional training.

D. Salary, at least commensurate to what the individual is earning on the job, would be necessary to interest any of our personnel in specialized training.

E. We could authorize leaves of absence only if it were possible to replace the person. This would mean that we would have no funds to contribute to the individual while on leave, because we would be hiring an individual in his place, using the salary budgeted for the person leaving. For periods of two weeks or less there would be no reason to hire a substitute or to curtail the individual's salary.

F. If the current annual stipend is about $2,400 plus $500 per dependent, this organization could not afford the necessary supplement to provide additional training. A $2,400 sum is actually less than current graduate assistants get for half-time work within the University, and it is not practicable to assume that established investigators could subsist on such a stipend without adequate additional compensation, which we would be unable to provide for an extended period of time.

G. At the present time, no personnel of this organization are in need of additional training, unless it were to be training of a very specific and somewhat esoteric type unlikely to be offered in a generalized program.

H. As only three of our people have less than a master's degree now, it could hardly result in an incentive for persons within this organization to take additional training. It might conceivably be an incentive to any new personnel to be added, but as I have stated above, we have never added personnel with the idea of training them on the job. We've added personnel already competent who can begin work on projects immediately.

III. The training components required in any such program depend largely upon the type of individual to be produced, and the

competence level at which he is to be considered ready.

In terms of development activities, for example, the following abilities would have to be considered:

1. Demonstrated competency in an area of study that is related to the objectives of the organization.

2. The ability to write at the level for which materials are intended.

3. A knowledge of the population to whom materials are directed.

4. An understanding of the capacity of teachers to adapt to new materials and ideas.

5. An understanding of alternative routes of presentation, such as programmed materials, etc.

6. An understanding of the importance of multi-sensory media involving the use of other than text pages.

7. A knowledge of multi-media, slide films, filmstrips, records, etc.

8. Comprehension of a variety of teaching techniques such as team teaching, audio, tutorial, mini lessons, etc.

9. The ability to delineate specific objectives for materials development.

10. The ability to investigate, take the initiative, and learn as the objectives of the organization evolve.

To evaluate newly developed materials, the individual would have to have a comprehension of evaluative techniques, know the limitations and the parameters of evaluation activities, be able to design an evaluation scheme, be able to ascertain the material's ability to reach its stated objectives, and be able to present evaluation data in such a manner as to be comprehensible to the population to whom it was directed. He also must be able to participate in materials development and contribute to the full cycle of the development task -- development, evaluation, dissemination.

In terms of dissemination, comprehension of the materials produced with their evaluation is essential. Understanding school systems and their adoption procedures would be requisite. An understanding of the demands of the new materials or curriculum upon teachers and students, and a facility for implementing a training program to meet these demands would be necessary.

Certain of the above can be achieved in courses such as evaluative methodology. But the bulk of the materials can be achieved only through a traineeship program wherein the individual is actually involved in developing materials, evaluating materials,

and disseminating information concerning them. No amount of coursework substitutes for actual on-the-job training. Although some of the more fundamental and prosaic techniques can be developed in the classroom, only by writing does one learn how to write, only by evaluating does one learn how to evaluate, and only by disseminating does one develop the art of diffusion.

Here again, however, because new materials are being developed, to be evaluated and disseminated, there needs be a certain amount of creativity and imagination in the individuals picked for such a task. Nothing will be gained with developers simply reworking the already existing programs. New ideas, new thrusts and directions, new packages of knowledge are required, and the recipient's development should not be stifled by prosaic and pedestrian coursework simply so he can do the work of the past.

IV. As stated above, our current staff requires no specific training in program components because they have already developed the necessary skills. While they may be considered as instructional personnel themselves, there is very little advance that could be garnered for them by either formal coursework or internship experience.

V. The Biological Sciences Curriculum Study, an organization with over a decade of experience in development, evaluation, and dissemination activities, can well be used both as an instructional

site and as an internship site for training developers, evaluators, and diffusion agents. However, this would be done in terms of actual programs currently underway. We would not consider structuring an ersatz superficial situation simulating the real thing. To participate most effectively in training, interns assigned to this organization would participate in actual development, evaluation, and diffusion activities under the guidance of experts currently employed by the Biological Sciences Curriculum Study. We would thus view an internship program as basically an on-the-job training activity in a real-life situation.

A. All 12 consultant-administrative personnel on our staff would be willing to supervise an internship in evaluation, development or diffusion. They would be willing to do so in connection with on-going actual programs, where the intern is taken into the organization and becomes part of it. He will be switched from task to task from time to time to give him the broadest possible experience.

B. We believe that a one-year internship would not be too little for participating in the variety of developmental, evaluative, and dissemination activities of the organization, assuming that the intern has certain basic competencies with which to begin. Obviously, the more deficiencies the individual has prior to being enrolled in the program, the longer it will take to rectify them.

C. We believe that each agency in the consortium should participate in the selection of the students who will intern at that agency.

D. As current contracts with funding agencies require the complete attention of each staff member, support for the intern and compensation for supervisory time would need to be provided through the consortium. An alternative that might be preferable would include such funds within curriculum development contracts.

E. Within the time commitments and funding of the actual programs currently underway, the BSCS is willing to accept a limited number of interns and involve them actively in the work of the organization. We do not believe that the establishment of artificial courses or disjunct dialogues would have half the value of the actual development of materials, evaluation of these materials, and dissemination of them. If, therefore, the BSCS can assist the evaluation, development, and diffusion training design project, it can best do so by involving interns in the programs in which it has the greatest amounts of expertise and experience.

APPENDIX B

WORKING PAPER ON THE EVALUATION, DEVELOPMENT AND DIFFUSION TRAINING DESIGN PROJECT

William D. Romey
and
John F. Thompson

Earth Science Educational Program
(ESEP), Boulder, Colorado

I. Needs for Persons Trained in Evaluation, Development, and Diffusion in ESEP

A. The project staff presently consists of 17 employees in residence at Boulder and 6 senior college consultants retained on a part-time basis. Nearly all of the professional level personnel, 13 in number, are involved at various times in evaluation, development, and diffusion activities. However, certain staff members spend a relatively large proportion of their time in only one or two of these activities. The numbers given below indicate the numbers of staff members who spend a significant portion, perhaps in excess of one-third, of their time on the activities specified:

1. Evaluation - 7 people, including 1 with a Ph.D., 3 with Master's Degrees, 2 with Bachelor's Degrees, and 1 with a High School Equivalency Certificate.
2. Development - 7 people, including 1 with a Ph.D., 4 with Master's Degrees, 1 with a

Bachelor's Degree, and 1 with a High School Equivalency Certificate.

3. Diffusion - 9 people, including 1 with a Ph.D., 6 with Master's Degrees, and 2 with Bachelor's Degrees.
4. Editorial - 2 people, 1 with a Master's Degree and 1 with a Bachelor's Degree.
5. Secretarial, Administrative, and Service Functions-8 people, including 6 with Bachelor's Degrees, 2 with college training less than the Bachelor's level.

B. Additional personnel needed: We could use additional people in all of these categories, and especially in evaluation, development, and diffusion. We may be hiring one additional secretary and one additional person whose time will be spent mainly in evaluation and development. Specialists in overall materials design and layout and a computer specialist are needed.

C. Effect of budget increase: If our organization's annual budget were increased by $100,000, and if this sum were to be used entirely for additional salaries, we might hire five or six additional people. One of these might be primarily an evaluation person (especially a computer specialist), and the remaining staff members would be used in development and diffusion activities. Note however,

in reality, that if our budget were increased by this sum, a quarter to a fifth of the new money would have to be used for support and publication activities.

D. Specific skills needed: The evaluation person employed would need to have skills in design, creation of instruments, knowledge of existing instrumentation, research methodology, computer programming, and statistical analysis. Most important of all, however, he would need to be able to ask the right kinds of questions, to interpret results, and to write up his results in terms understandable by laymen as well as fellow researchers. Our group is especially interested in attitudinal analysis and he would have to be particularly well-prepared to deal with "dirty" systems consisting of many intertwined variables. Expertise in the area of helping devise self-evaluation systems is important.

The people employed primarily for development purposes would need to have experience as school teachers, training in psychology, and preferably some experience as facilita' s in encounter groups. They would also need to be -llful writers and should have had a good deal of experience with resource materials useful in school situations. People whose primary function would be in diffusion

should have considerable experience giving oral presentations in public before groups of various sizes. They would also need to be highly skilled in writing and probably also in the development of graphic materials.

II. Needs of Personnel Presently Employed by Our Organization

A. Our staff members in evaluation need additional training in how to deal with measurements in the affective domain and how to conduct longitudinal studies of various kinds. Associated research methodology and statistical analysis training are also needed. They need training in the design of instruments, data programming, technical writing, and interpretation skills for communicating with laymen. Staff members involved in development need further training in how to operate effectively as facilitators or trainers in encounter group situations. They also need training in writing skills and in the area of materials design. The diffusion staff needs training in the areas of graphic presentation and writing.

B. We would be unable to release staff members for training on a full-time basis for periods in excess of one or two weeks. Staff members

could be given small amounts of release time for taking semester-long courses, however, as long as their effectiveness in their positions was not reduced. In general, most staff members would probably continue working full-time on their staff duties and would take any outside training on the side. Short, intensive training sessions followed by supervised work on actual studies related to our own project needs would be desirable.

C. Persons with additional training might return to their former positions or to re-defined or new positions, depending on the particular skills they had learned. Promotions might be possible in the case of greatly increased skills. However, our budgetary limitations would be a controlling factor.

D. Some of our staff members might feel that credits towards a Master's Degree and financial support to the extent of tuition remission plus a small additional stipend would be sufficient to interest them in further training. In some instances, it might be possible for employees to work for ESEP on a half-time or three-quarter-time basis and to spend the remaining portion of their time on outside training. An amount

of support equal to the amount of salary lost would be necessary for such people. The actual amount of financial support (or the amount of release time granted if there were a fixed stipend) could be adjusted as necessary.

E. Our organization would probably not be in a position to grant extended periods of leave. Existence of grant-supported projects such as ours is tenuous to a large degree, e.g., we could not guarantee the availability of a position after six months or a year. We might be in a position to grant leave without pay for periods of a few weeks or possibly for a summer session. Whether or not we could allow a leave of absence would depend, of course, on the work load at any given time. The project might be in a position to supplement a trainee's stipend for a short period of time, providing the trainee would be willing to spend short periods of time back in the staff offices.

F. We could not supplement a trainee's stipend under present funding. We could give small amounts of release time to our regular employees who might become trainees.

G. There are four or five people currently in our organization who would avail themselves of outside training. If reasonable stipends were

available, additional staff members might wish to avail themselves of additional training. At least two of our staff members are currently working toward Ph.D. degrees at the University of Colorado. These staff members, both working in the area of evaluation and development, might be interested in such training. If a good program in development were available, it is possible that several staff members might be interested.

H. The possibility of earning an advanced degree would probably be a strong incentive for people in our group. Many of our staff are already at the Master's degree level and credit toward a Ph.D. would be desirable.

III. Internship Experiences and Seminar-Tutorial Sessions

Activities in this general area would best help our staff members. Conventional coursework would be of little value. Seminar-tutorial work in statistics, design of studies and instruments, affective areas of education, unobtrusive measures, interpretation of results, and self-evaluation should be available. Supervised independent research or study projects would be of great worth. Real studies on real problems could be undertaken via activities directly related to the operations of the curriculum projects.

IV. Supervised Internship Experiences and Participation in Actual Studies, "Real" Development and Diffusion Projects

Undoubtedly participation involving the ingredients above will be most important. "Mickey Mouse" components reflected in course credits, etc., are seen as having little value to our staff members. Tutorial sessions and frequent group meetings (in task-oriented encounter group settings) are seen as having great value.

V. Use of ESEP as an Instructional and Internship Site

Our organization might be well used as an instructional and internship site for developers, encounter group trainers and facilitators, and for evaluators (especially in the area of attitudinal measures). A number of staff members presently employed by our group would be in a position to supervise internships in these areas. In general, our staff members would be willing to undertake these functions. If there were any significant time involvement of our staff members, it would be highly desirable to have participating staff members (in faculty roles) placed on university appointments and to have appropriate sums of money paid to the project to reimburse us for time spent. If the staff member agreed to conduct training activities in addition to his normal project duties rather than in lieu of some

of them, such monies might be paid directly to the staff member. In general, however, we would prefer to have such training activities conducted on project time and have any monies paid directly to the project.

APPENDIX C

WORKING PAPER ON THE EVALUATION, DEVELOPMENT AND DIFFUSION TRAINING DESIGN PROJECT

James C. Moore

Southwestern Cooperative Educational Laboratory (SWCEL), Albuquerque, New Mexico

The purpose of this working paper is to provide some considerations for the design being developed by the consortium. The paper will not react to each of the specific points in the suggested working paper format. However, most comments will be related in part to the format, and some additional thoughts will be presented.

It can be pointed out initially that this organization has needs in the areas of evaluation, development and diffusion. This certainly is not a unique need among regional laboratories or similar organizations. At the same time, however, we would probably have to say that we are "fully" staffed. That is, we do not have a pool of money standing by to be used to hire evaluators, developers and diffusers even if they were available. This is not unique, either. Another reality is that nearly everyone here, at what might be called the professional level, is doing things that could be identified (quite easily by most external observers) as evaluation and development.

Given this kind of situation, our inclination is toward a training program directed at employed people who already have significant job responsibilities in the area of development and evaluation. This kind of approach would have as its focus striving for significance by ameliorating the development and evaluation needs of people already in positions, rather than recruiting new people into open positions. Hiring additional staff may become more pertinent when we open many "new" positions. This is not likely to occur in the next year or two.

Thus, we would suggest a new title for the Consortium (or at least an additional focus):

A Consortium Designed to Improve the Skills of Educational Developers and Evaluators (or something like this).

Given the implications of the title above, what would be some of the important points to consider?

1. Could the funding agency (ies) be convinced that perhaps a more crucial need is to improve skills of currently employed personnel than to recruit new people into training programs? I think a good case can be made. Some of the following ideas could be expanded on in making the argument:
   a. The population of interest can be readily identified, i.e., almost every educational organization has personnel with significant developmental/evaluational responsibilities who lack significant and requisite skills.

b. The "traditional" programs in training educational researchers (with a few exceptions) have not had significant impact, although many highly qualified people have completed the programs. Why, in essence, design the same process, call it the training of developers and evaluators, and throw in a little internship to boot?

c. Many persons feel that a more successful training model has been developed via the AERA presessions which have been aimed at skill improvement for already employed personnel. To the extent that this is true, imagine what might be done with the AERA presession model if sessions were designed to last a month, six months, or a year.

d. In amplification of "a" above, it should be noted that many organizations also have competent personnel who could and would contribute to the program if the resultant effect was the improvement of the people working with or for them.

e. Through a consortium arrangement, bolstered by other cooperating organizations, a network of experiences (i.e., internships) could be provided for the participant which relate directly to his job. (Conceptually, in most traditional programs, internships are designed around experiences a person might hold at a future date,

whereas a strong point could be made for internships conducted concurrent with employment and concordant with present job responsibilities. For example, in a not-so-recent issue of the Harvard Educational Review, it was noted that practicum teachers reported deficient skills and knowledge in the area of tests and measurement as a high priority problem. On the other hand, pre-service education students gave such courses low priority. It is suspected that many people now in evaluation and development roles with specific responsibilities feel "needs" in multiple skill areas.)

f. The program could be given the flavor of individually prescribed experiences and training.

g. Although evidence, either supporting or refuting, is lacking, it would seem logical that a program that improves current personnel is considerably more cost-effective than a program which calls for making positions available for new personnel, and for training new entrants into the field.

2. Other considerations related to the consortium training program.

a. The program should be designed to relate to the individual's day to day responsibilities, regardless of where the individual might be a participant.

To clarify this a bit . . . the idea of "leave of absence," or culminating in a "master's degree," etc., possibly should not be made explicit. It is quite conceivable that a participant might be away from the home organization working (interning), varying from taking classes at the Laboratory of Educational Research to spending a period of time being a teacher aide . . . the idea being that the participant really never leaves his day to day responsibilities.

b. The above approach in "a" might also be more easily accepted by a participating organization. For example, if we participated in a program which required a leave of absence from our organization for a period of time, say a semester or two, and the individual would come back to us after the leave with new skills, etc., we would probably participate. However, the individual sent to the training would be someone we could "spare" for a length of time and not, in all likelihood, be the individual who would gain the most, since an entire program effort might have to be delayed.

c. Obviously, a major task would be how to design and manage such a consortium. The Laboratory of Educational Research would have the overall task of implementation and management. The substance of the original proposal would not change since

the thrust would be toward development and evaluation with interdisciplinary overtones.

Finally, I should like to indicate that this laboratory is quite interested in actively participating in the continued design, and hopefully the future implementation, of the consortium, regardless of the acceptance or rejection of the ideas expressed in this paper. Although actual commitments of time, personnel, or money, require further deliberation, the probability of full participation is quite high. Thus, this organization could be considered not only as a source for program participants, but concurrently as a training site.

In conclusion, I have not responded to the specifics asked for in the suggested format for working papers since it was indicated at our recent meeting that your original approach would likely be modified greatly on the basis of data inputs. Should you need the information asked for in the format under IA, IB, and IC, I will obtain it. IA would take a day or two to "decide", while IB and IC wouldn't be much more than off the top of the head reactions unless we take more time to study the situation.

ID and IIA, I feel, should be part of the consortium process. That is, one of the major objectives of the consortium would be to identify the skills needed by individuals. Otherwise, all I can say is "yes", all those things under "ID and IIA" are needed, and probably more. It would seem that in the proposal a scheme (process) could be presented that would be

used to identify the specific skills as part of the training experience. This would further the idea of aiming at individual needs and not pre-determining the things we think are necessarily important. (Things like design, measurement, and statistics can be given as probable needs, however, in a proposal.)

I can be more specific on the things under II, III, and IV when it is decided on the approach you are going to take in regard to trainee population. I realize that you too are holding your approach strategy until you get some feedback on what we tend to like. I have already indicated this organization's interest in participating, as asked for in V.

I will be most happy to clarify or expand aspects of this paper if requested and hope to contribute to the continued design of the consortium.

APPENDIX D

WORKING PAPER ON THE EVALUATION, DEVELOPMENT AND DIFFUSION TRAINING DESIGN PROJECT

Masahito Okada
Member of Professional Staff

Southwest Regional Laboratory for Educational Research and Development (SWRL), Inglewood, California

To provide answers corresponding to the questions in the proposed format extensive deliberations would be required at this organization. Therefore, many of the questions will remain unanswered or answered in a rather imprecise manner. Should you require more information or exact data, it could be provided for you at a later date.

I. A. SWRL employs approximately 180 employees. The professional staff are approximately equally divided at the doctoral, masters, and bachelors degree levels. The evaluation staff is concentrated largely in the integration division whose function is that of "diffusion." A few staff members at the bachelors, masters, and doctoral levels are involved in the evaluation of new projects produced in product development. It is their function to provide for the formative evaluation of new products. There is no separate group within the organization whose primary function is that of evaluation. Approximately 35 persons are involved directly in the development

of new products. Approximately 50 persons are involved in the diffusion task. The distribution of academic degrees in both divisions approximates that found in the laboratory as a whole.

B. SWRL has recently been funded to build a plant capable of housing approximately 430 employees. The building is scheduled for completion in the summer of 1972. At that time it is expected that there will be a substantial increase in new personnel.

I. C and D, and II, III, and IV are not responded to directly, but it is apparent that the increase in personnel will create a large demand for new entrants into the fields of evaluation and diffusion.

V. SWRL has an established internship program in existence under the direction of the Division of Resource Services. As indicated by our Director, trainees in the program would be eligible for these internship slots. This internship arrangement is more fully explained in the internship guidelines which are enclosed.

Skills and Knowledges Desirable in Product Development Personnel

Most of the following apply to the activity heads who are directly responsible for the development of new programs. In some cases these same competencies can be seen to be desirable characteristics of all personnel working in product development.

1) A substantive knowledge of the area (reading, music, etc.)

2) At SWRL, an understanding of the criterion referenced approach to product development.

3) An understanding of formative and summative evaluation procedures.

4) The ability to design appropriate instruments to evaluate developing programs.

5) A basic knowledge of research strategies and statistics.

6) The ability to write for various audiences (children, teachers, etc.).

7) The ability to administrate and supervise in order to capitalize on the potentials of all co-workers in a joint venture.

8) A basic understanding of educational psychology and learning theory.

9) An understanding of child development, specifically as it relates to product development.

10) Some appreciation for the realities of classroom management.

11) Divergent and convergent thinking abilities.

12) The ability to search out and evaluate relevant research studies.

13) The ability to use business managements in product development.

14) A knowledge of production logistics and variables (e.g., cost, types of art, formating, media, etc.)

15) A knowledge of consumer characteristics (e.g., how much will a school district pay for a new art program?).

16) A knowledge of typical curricular structuring in the public schools (e.g., how much time is usually allotted to reading in grades K-6?).

17) A knowledge of current innovations in education which may allow for new programs (e.g., open space programs, team teaching, television, computer assisted instruction, etc.).

18) Competence in measurement procedures.

SWRL Internship Guidelines

Because of the obvious relevance of the activities of SWRL to certain college and university graduate level programs, the following guidelines have been developed to assist in the establishment of internship arrangements.

1. It is expected that whatever the nature of the practicum experience, it be mutually beneficial to the trainee and to SWRL. In other words, it is anticipated that the intern will profit from assisting in the attainment of a SWRL project goal.

2. Internship arrangements will generally be set up on a part-time hourly basis rather than full time. Because of the considerable variability in class schedules of graduate students, it is appropriate, insofar as it does not hinder SWRL opeartions, to tailor the work-week commitments to the intern's schedule. Sometimes, for example, the intern would devote 5-10 hours per week to his SWRL project. On other occasions, particularly during summer and other academic vacations, almost a full-time schedule might result. Although some variability in the work-week schedule can be arranged, the average should be a minimum of 10 hours per week.

3. Because the intern will either receive academic credit (e.g., through special studies courses) or generally beneficial experiences during the internship, regular salary arrangements are inappropriate. However, in order to compensate partially for the inconvenience and travel requirements associated with off-campus internship activities, the intern will receive $2.50 per hour for the time he devotes to the SWRL practicum experiences. In light of the intern's usual level of training when he commences the practicum (usually the equivalent of a master's degree plus additional training in product development activities), this represents an hourly rate approximately half that which might be earned by comparably trained personnel.

4. In the case of each internship arrangement, the SWRL Director or his delegated representative would, in conjunction with the intern's faculty advisor, work out and state briefly in writing the nature of the intended internship experience. Both the representatives of SWRL and of the participating university would approve this written statement.

5. Supervision and evaluation of the intern's activities will be conducted jointly by the trainee's immediate SWRL superior and by a representative of the participating university.

6. As part time staff personnel, all hiring, financial arrangements, etc. will be handled through normal SWRL channels.

APPENDIX E

WORKING PAPER ON THE EVALUATION, DEVELOPMENT AND DIFFUSION TRAINING DESIGN PROJECT

Barry B. Beal
and
Gerald E. Elledge

Denver Public Schools, Denver, Colorado

Enclosed is a response to the working paper request. Several general statements have bearing upon our participation:

> The Superintendent has approved our participation in the design of this project. In the event your program becomes operational and our continued participation is desired, he indicated that such participation would be subject to review.

Our proposed 1971 Budget is an austere budget and supportive funds are not available. Sabbatical leave requests and inservice fund allocations would compete with other such requests.

An intern, on-the-job training model, has the most appeal. However, one semester or full year sabbaticals may be possible. The Executive Director of Planning, Research, and Budgeting, has indicated approval of this idea and has suggested that one or two persons might participate.

The potential benefits of such a consortium-type training program are recognized.

It is probable that where mutual benefits are evident that cooperative working relationships between the consortium and specific offices or departments of the District may be arranged but subject to necessary administrative approval.

A description of likely participants includes:

- persons having an M.A. degree.
- those currently involved to some degree in evaluation or program development.
- those with six or more years' experience in the Denver Public Schools.

Office of Planning, Research, and Budgeting.

Within the Denver Public Schools, there are certain office persons trained in evaluation, development, and diffusion who would be of benefit to the District. The principal area of demand is found within the Office of Planning, Research, and Budgeting. A relatively small pool of potential trainees exists here, however. There are three Ph.D. and five master degree level people in this area. A course of study for these people might include research design and methodology, statistical analysis, objectives writing and analysis, sampling procedures, and change stategies.

It would be difficult for these people to take a year's leave for this purpose as it would mean replacing them with inexperienced people in the Research Department. Therefore, the best training model from the Research Department's viewpoint would be one which incorporates some type of on-the-job upgrading. This might take the form of three half-days, plus Saturdays or evenings, on campus, and the rest of the time on the job for a period of one year, or an intensive summer program with periodic meetings throughout the academic year. The inducement for participation for this group of people would be in graduate credits for salary increases and stipends for Saturdays, evenings, or summer sessions. A minimum of five people in the Research Department would be interested in participating in such a program. The Research Department might be used in part for training interns in evaluation, there are people in the department who would be willing to supervise such a program.

Evaluators in School Settings.

Another area in which persons trained in evaluation would be of benefit is the group of teachers resposible for evaluations within school units - approximately twenty-five in total. These people are responsible for the testing in each of their secondary schools. This role could be expanded to one of curricular evaluation and development as well as testing. A potential for ninety-one evaluation people

exists in the elementary schools. No such position exists now in the elementary schools and probably will not in the near future. However, this function is being fulfilled as an additional teacher responsibility. These persons then, could serve as a pool of potential trainees. A course of study for these teachers might well include: measurement, instrumentation, objectives writing and analysis, some research design, and statistical analysis and change strategies.

Persons in these roles could spend a year on campus in intensive study. It is possible for some teachers in the Denver Public Schools to obtain a sabbatical leave of absence for one year at one-half salary. This financial arrangement, along with the usual trainee's stipend, would probably be sufficient to attract our teachers. In addition, they would be encouraged to participate in a program of this nature if they could earn an M.A. degree or academic credits for salary purposes beyond the M.A.

Program Specific Internships.

Another possibility would be to identify specific program areas for evaluation, development, and diffusion such as:

- Guaranteed Performance Contracting
- State Assessment and Accreditation Programs
- ESEA-Titled Programs
- School Unit Analysis (ala IDEA Schools) or Decentralization
- Reading Research Evaluation

The topics above are likely concerns of high public interest during the Decade of the 70's and school districts will, of necessity, be required to pursue evaluation and development programs in these areas. Persons for one or more of the above areas could be identified to participate in a cooperative internship with the consortium. It is likely that a full year or a semester sabbatical leave could be granted to qualified individuals. This person(s) would, prior to the internship, be charged with the development of a viable evaluation, development, and diffusion program for the Denver Public Schools in a specified area. There would be a potential of then giving such an individual a special assignment to implement the program design developed during the internship. The course of study for these people would include research design and methodology, instrumentation, change strategies, data interpretation, objectives development, and measurement. It would seem that this approach might allow national appeal but with a focus and flexibility which could serve highly specialized needs. One person might be designated for perhaps each of two program areas. Such individuals, most likely, would have a masters degree, but would be interested in receiving an Educational Specialist certificate and academic credits.

APPENDIX F

WORKING PAPER ON THE EVALUATION, DEVELOPMENT AND DIFFUSION TRAINING DESIGN PROJECT

Douglas Sjogren

Northern Colorado Educational Board of Cooperative Services, Boulder, Colorado

The Northern Colorado BOCES is an organization similar to what are often referred to as immediate districts. This board serves seven school districts in Northern Colorado. These districts have one-fifth of the public school teachers and students in Colorado. This particular board was established to work on diffusion, development, and evaluation of educational programs in the seven districts. This is not a typical function of such boards, but we believe it is a viable and realistic kind of function for such an organization. In effect, we are testing a model for this function with our board. This brief background was included to provide a perspective for our points-of-view.

Before responding specifically to the questions in the suggested format, I would like to present some thoughts I have with respect to evaluator training. I have serious doubts about the success of any evaluator training program if it is designed to produce "evaluators". It seems to me that evaluation of educational programs is a process that involves all components of the system. Whether or not meaningful evaluation takes place in a public school is

not nearly so dependent on the school having a "researcher" or "evaluator" as on whether the staff, at all levels, is oriented to evaluation. This statement is conjecture on my part based on rather limited experience along with the observation that school systems and educational programs that have their "evaluator" do not stand-out in terms of effectiveness or impact. Today, most of the real evaluation (i.e. that evaluation that makes a difference) in the schools is done by the staff. It seems to me our task is to strengthen this evaluative effort which is being done by involvement with the staff rather than by training a specialist who typically remains on the periphery of the system. Certainly people with special skills are needed in order to improve the evaluative effort. The range of skills is large, however, and it is unlikely that all can be developed in one person. It is more likely that many of the skills can be developed by recognizing and capitalizing on the range of interests and abilities among the staff members. I guess I am saying that if one person is to be trained for the evaluation role in a public school he should probably be a rather high-level administrator who has decision-making responsibility at the highest level. This person should be a generalist who can establish in-service programs and use other techniques to develop an evaluative point-of-view in the staff. He should be aware of the many kinds of information gathering procedures and should establish procedures for developing competence in these areas in his staff or know where the competencies

can be obtained. He should also be able to establish a system for gathering, analyzing, and synthesizing the information as an on-going system.

I have difficulty distinguishing evaluation from development in a school context so that these remarks apply to development as well. With respect to diffusion, I guess I feel that diffusion will take care of itself if the schools become developmentally or evaluation oriented. As the schools become able to examine and question existing programs they will be more likely to search for alternatives. There are some specific skills that are important in diffusion, however. One is to know where to find alternatives and to evaluate them. Another is the important skill of preparing diffusion materials that are useful for the potential user.

The evaluation and development effort of the Northern Colorado BOCES has two general aims or functions. One is a training function in which we are striving to develop in the staffs of the schools; an awareness of the need for systematic development and evaluation in their districts. The second function is to provide for the districts certain competencies in evaluation and development that they do not have in the district and which any one district would not be likely to obtain. We also have immediate access to the ERIC data base.

The reader should be aware that our operation started on July 1. Consequently, many of the answers to the questions are just "best guesses" about our or a similar organization.

I. A. Evaluation: - 3 F.T.E.

One Ed. D. - full time
One Masters - half time
One G.A. - half time
One Secretary - full time

Development - 3 F.T.E.

One Ed. D.
One Masters
One Secretary

Diffusion (Retrieval Center) - 12 F.T.E.

Three Masters
Three Bachelors
Three Tecnical
Three Secretarial and Clerical

B. At the present time, we do not need additional people. I would expect that we will want at least one more full-time person at the Masters level in both evaluation and development. We expect to use many temporary consultants in these areas.

C. A budget increase of $100,000 in our organization would be tied to a specific program, and I can not indicate how it would be used except as I have indicated in B.

D. Specific skills needed in evaluation and development component. All of those listed in the format are needed plus participant-observor skills, administrative

skills, economic analysis, political sensitivity, and human relations.

II. A. Within the evaluation component we are weak in the areas of participant-observation, administration, and economic analysis.

B. In our situation, short term, concentrated kinds of training sessions would be preferred.

C. Most would stay in their present position.

D. Financial support would not be needed in most situations.

E. We would probably not grant leaves of absence. We would hire a person with certain skills to do certain things and then use on-the-job and in-service training to develop both depth and comprehensiveness.

F. Short-term training sessions would be regarded as part of the person's job.

G. I think each of us in evaluation might avail ourselves of certain kinds of short-term training.

H. Not for the persons presently employed.

III. I feel internship type experiences are very important for training new people who will serve as directors of evaluation.

IV. In working with persons already employed, I feel that short-term intensive kinds of training are effective. This training is most effective, however, if the training agency provides follow-up support and consultation as the person might start activities after the training session.

V. I feel our organization can be a useful training site for interns who would be interested in working in an organization similar to ours or in a school district. We can provide a variety of experiences for the person in the three areas of evaluation, development, and diffusion. We have four persons in the organization who could supervise an intern, and all would be willing to do so.

APPENDIX G

WORKING PAPER ON THE EVALUATION, DEVELOPMENT AND DIFFUSION TRAINING DESIGN PROJECT

John Ahlenius

Colorado Department of Education (CDE), Denver, Colorado

I. Personnel Needs

A. Presently, the CDE employes seven professionals in evaluation, four of whom have Doctorates. One employee (Masters plus) has diffusion as a role. Nineteen, one-third of whom have earned their Doctorate, are in the Improved Learning Unit, which is the closest thing we have to your definition of development.

B. We were recently reorganized and are currently properly staffed or nearly so.

C. If the Evaluation Unit gets a requested $115,000 supplemental budget, we will commission $62,000 for professional and support personnel. These additional personnel would most likely be Bachelor or Master-level trained. We would not need additional Doctoral-level personnel. We could use para-professional help in certain aspects of our data processing. With additional money in development and/or diffusion, the CDE would likely place more emphasis on diffusion. Assuming we have the curriculum areas covered, we need help in carrying

the message to the teachers of the state. For example, one charge has been to reach 5,000 teachers with the "Invitation to Improved Learning" package in one year.

D. In evaluation, we need help in item writing and field testing for the item pool in our state assessment instruments. Detailed efforts are needed in the "nuts and bolts" area of checking congruence between goals-objectives-items. We need help in communication with "hardware" people and instrumentation for processing judgmental data. We should have a para-professional trained to use randomizing techniques for many studies.

In development and diffusion, we probably need the skills (roles) that Ronald Havlock elaborates as needed by change agents:

1. Development of a viable relationship.
2. Assessment of needs (diagnosis of the problem).
3. Acquisition of relevant resources.
4. Selection of an appropriate solution.
5. Achievement of acceptance.
6. Stabilization and self-renewal.

This appears to be salesmanship, but it is supposedly more than that. Our personnel need training sessions

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Havlock, R. C., A guide to innovation in education. Ann Arbor, Michigan: Center for Research on Utilization of Scientific Knowledge, The University of Michigan, 1970.

(simulation possibly) on these skills. Some of Havlock's skills (roles) might be untrainable. Is it possible that one must be "born" with the ability to establish a relationship?

II. Training Needs

A. The training needs described in this working paper predominantly represent on-the-job types of training. Although several in evaluation want additional training in design, research methodology, statistical analysis, objectives analysis, measurement, survey research, etc., it is assumed that they brought to the Department these skills as a result of our pre-service training. In this case, however, the ideal is not always congruent with the real.

We need a model, and training in that model, for inservice-training of local education agency personnel in evaluation. Our unit with consultants from the Title I department are called upon to "teach" LEA representative how to evaluate their programs.

We need training in instrument construction for assessment in the affective domain. Again, Title I schools repeatedly ask for this kind of help. The proposed training project might even go directly (i.e., bypass the CDE) to the LEA Title I directors in the regard.

There are eight Colorado schools piloting the PCI (pupil centered instrument) from the Belmont Group. An additional 47 Colorado districts are involved with the CPIR (Consolidated Program Information Report). These two groups are potential audiences for training in evaluation.

B. The Colorado Department of Education endorses and would coordinate more fluidly with intermittent on-the-job training. It currently is allowing 15 employees two weeks of training (4 days in training, few months back on the job, 2 days in training, a month on the job, and a final 4 days in training). This seems to be highly feasible and practical as one's work waits for him while he is away on any kind of leave.

C. In most cases, the department views on-the-job training as upgrading for the employee's current position. Following the recent reorganization, many people found themselves in redefined positions. That, however, was not due to any training that they received.

D. Financial aspects of short duration training programs are not critical for CDE personnel. Colorado Department of Education employee's accrue 2 weeks of educational leave with pay per year. Training sessions that pay stipends (and some have) are, therefore, considered as supplements to income.

E. Year leaves or semester leaves are granted, but not in large numbers. As mentioned above, one to two week training sessions have been viewed most favorably by the Administrative Council with some four week and fewer six week sessions getting the nod of approval.

F. See D above.

G. About two-thirds of the evaluation staff would use short duration training courses in evaluation. Most of the nineteen in development would participate if the right kinds of training are planned. (The matter of definition of development and the Department's participation needs to be negotiated with Dr. Chris Pipho and his staff). In a study conducted within the department a few years ago, seventy percent of all employees listed diffusion as one of the roles they performed, in carrying out their jobs. Fifty percent listed it in the top five of their listed roles.

H. Earning a Master's degree would not be an incentive for training. Most professional employees have at least a Masters. The Colorado Department of Education is most in need of short term training programs.

III. This paper does not address itself well to the pre-service training of employees. Generally, experience with the tasks assigned to the particular job within the Department is the type of training perferred over course work or an internship experience.

IV. Concentrated courses coupled with simulated or "on-the-job" experiences best utilize the time available for training present employees. For instance, the computer printout of the recently completed pilot for state assessment could serve as the text for a course in data analysis and reporting.

V. The Colorado Department of Education would readily agree to be an intern site in all three areas. Not only would we profit from the skilled labor, but it would provide us with a pool of future employees. We are not in the position of being able to contractually provide jobs for individuals assigned to us for an internship experience, but departmental turnover is high enough to provide some promise for employment of capable and well-trained individuals. Generally speaking, the Department needs personnel who have had public school teaching experience.